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Documento de Trabalho Nº 15

**COLONIZATION POLICIES, LAND
OCCUPATION AND DEFORESTATION
IN THE AMAZON COUNTRIES**

Charles Curt Mueller



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Brasília, maio de 1992.

This document is a preliminary, and more extensive, version of a text prepared for The World Conservation Union (IUCN), as a chapter of a Neotropical Rainforest Atlas, to be published by IUCN.

Charles Curt Mueller is Full Professor, Department of Economics, University of Brasília; and Senior Consultant of SPN Institute, Brasília, Brazil.

The author is responsible for the opinions and interpretations expressed in this paper.

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APRESENTAÇÃO

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1. INTRODUCTION

Contrary to what has been the case in other parts of the world, the Malthusian mechanisms of natural resource destruction for survival, the need to generate foreign exchange, or market oriented capitalistic agricultural expansion were not dominant factors in the process of occupation and deforestation in most Latin American countries with important shares in the Amazonian ecosystem. The main elements in this were the need to alleviate the pressure caused by growing numbers of landless peasants and small farmers in areas settled for quite some time, characterized by a very unequal land distribution, coupled with geopolitical goals of the ruling elites; not infrequently speculative interests played an important role.

Considering the first of these elements, often the areas of agrarian tension were far from densely populated. However, their land was heavily concentrated in a few influential hands and an easy way of getting around the pressure exerted by a growing number of landless workers and peasants was to induce them to move into the "empty" Amazon.

As for the geopolitical motivations for colonizing the Amazon, they were present, in different forms, virtually in all Amazon countries. The fear that vast "empty" areas would bring about foreign intervention has played a role in the Amazon strategy of most of these countries, leading to the implementation of policies to promote their occupation. Never mind the fact that these areas were already peopled by Amerindians; as a rule, those were either ignored or concerns with them were submerged by national security priorities.

Policies to induce demographic expansion and economic integration tended to place a heavy emphasis on land occupation, both by peasants or landless workers, and by economic interests willing to undertake agricultural activities in large areas of land -- that is, in colonization policies. And the activities of these agents led to a considerable removal of the forest cover. In this paper we render an account of the evolution of colonization policies of the main countries sharing the Amazon ecosystem, starting in the post World War II period, when the process was intensified. Emphasis is placed in the experience of Brazil, both because a large portion of the Amazon is in this country, and because, after 1970, this country has made wide use of an impressive array of colonization policies. However, the evolution in other countries is also examined.

2. EXTENSION OF AMAZONIAN DEFORESTATION

Figure 1 shows the location of the Amazon ecosystem in Latin America, and thus, in the countries sharing it. According to Schubart (1991), by 1985 the participation in the Amazon forest, and the extent of deforestation of each of these countries was the following:

TABLE 1. AREA IN RAIN FORESTS AND PROPORTION OF THE FOREST CLEARED OF THE MAIN LATIN AMERICAN AMAZON COUNTRIES - 1985.

Country	Area in forest (million km ²)	% of total forest	% of country	% of forest removed (1985)
BOLIVIA	0.558	9	51	2.4
BRAZIL	3.630	57	43	11.7
COLOMBIA	0.431	7	38	11.8
ECUADOR	0.126	2	47	21.3
PERU	0.745	12	58	7.3
VENEZUELA	0.427	7	47	20.2
OTHERS	0.424	6	90	0.4

We observe that more than half of the Amazon rain forest is in Brazil, followed, far behind, by Peru and Bolivia; however, it encompasses a substantial proportion of the territory of all countries. As for the area deforested, in relative terms Ecuador and Venezuela present the largest proportions; however, in absolute terms Brazil is, by far, responsible for the most extensive Amazon deforestation.

3. PROMOTED AGRICULTURAL COLONIZATION IN THE AMAZON

Until the middle of this century the Amazon rain forest of most of Latin America was sparsely occupied, despite the exploratory incursions began centuries ago and the extractive booms (mainly latex) of the nineteenth and early twenty centuries. There were attempts at introducing large scale, organized, exploitation of tropical products, such as the latex tree plantation by Ford in Brazil, but most failed and were abandoned. Until the mid 1940s this immense and inhospitable region was basically left for the native peoples and for the trickle of colonizers which had settled some of their more accessible areas. The middle of this century, however, began a complete reversal of this situation; growing waves of settlers started moving in and there were attempts at rapidly developing the Amazon.

Public policies were a fundamental element in the recent processes; among them, colonization policies had a central role. An impressive array of measures and programs have induced or facilitated the invasion of growing areas of the Amazon, both by the destitute and the powerful. This section examines the evolution of the colonization policies and their main effects over the region. Part 3.1 focuses Brazil, and part 3.2 (items 3.2.1. to 3.2.5), the cases of the other main Latin American countries sharing the Amazon.

3.1. The Case of Brazil

In Brazil, the expansion of agriculture has stongly relied on the incorporation of land in the agricultural frontier; and this brought about the removal of tropical forests from vast areas, particularly of the country's Southeast and South regions. To give an idea, before the coffee boom started in the mid eighteen century, São Paulo, a major coffee producing state, had 82% percent of its land area in tropical forests; in 1973 the proportion was only 8.3%. Similarly, in the end of the 1940s almost 90% of the area in the north of the state of Paraná -- one of Brazil's most important agricultural areas -- were in native forests; today they cover only 2% of this region (Mueller, 1991, p. 20-21).

Until the late 1960s the horizontal expansion of agriculture was basically spontaneous. The only official action with impact over the process was the improvement of the transportation system. In contrast, recent frontier expansion in Brazil's Amazon has been stongly affected by public policy. To a large extent, events were a consequence of the style of development followed by this country after World War II, characterized by urban bias and by the exclusion of large segments of the population from its benefits (Mueller, 1992). This style of development acquired particularly perverse characteristics after 1968. On the one hand, it increasingly privileged the ruling elites and powerful economic interests; on the other, conservative modernization of agriculture (modernization without previous distributive reforms), generated growing numbers of migrants, expelled from the main agricultural areas in the Center-South. A large proportion of these migrants moved to the large urban-industrial centers, but a considerable amount went to the agricultural frontier which, in the late 1960s, reached the Amazon; the rural areas of the center-south joined the poverty stricken Northeast as a source of destitute migrants. And with the migrants, the forest began to fall at a fast pace.

The involvement of economic groups and of government corporations in ventures in the Amazon also had a fundamental role. There were mining, hydroelectric and industrial investments, but a major cause of deforestation in the Amazon has been the activities of large agricultural enterprises and cattle ranches.

Colonization policies had an important role in both the above processes. From the inception of the Amazon strategy in the mid-1960s the policies directly affecting frontier expansion in the Amazon proceeded in the following phases:

a. **The incipient phase, up to 1965.** Policies aimed at integrating the Amazon into the Brazilian economy were attempted before the 1960s, but their effects were not significant (Mahar, 1978). However, in the late 1950s the first major road linking the region to the Center-South -- the Belém-Brasília highway -- was built. It established a connection between the more dynamic areas of Brazil and the southeast margins of the rain forest, later an important agricultural frontier area.

b. **Formation of the Amazonian strategy (1965-69).** The military regime established in 1964 soon defined a specific Amazonian strategy. To the contrary of what is currently thought, it was not the concept of a resource frontier to be exploited for national development that moved the new regime; instead, the main objectives were geopolitical. The projects and actions conceived for the region did not undergo any type of economic viability study. The first major natural resources survey began after such projects were started and, in most of the cases, large investments were implemented without cost-benefit analyses (Torres, 1990). The main objectives of the strategy were to induce rapid occupation of parts of the huge empty spaces of the Amazon, regardless of the economic (not to say environmental) sustainability of the processes chosen for this, and to integrate the region into the mainstream of the country's economy. It was claimed that, by establishing a demographic and an economic basis for the defense of the enormous extension of the country's international borders to the north and the west of the region, and by promoting the settlement of its huge empty spaces, claims by foreign powers over the region would be more easily prevented. A motto frequently voiced in the 1970s was "integrate it or lose it".

In 1965 **Operation Amazônia** was instituted, to begin implementing the new strategy. Its main instrument was a regional development program based chiefly on the concession of tax rebates and other financial incentives to private investment in the Amazon. And an important portion of the investment projects contemplated by this scheme were agricultural -- primarily extensive livestock ranches. Between 1966 and 1969 a total of 166 large livestock projects were approved, or 21.7% of all projects approved up to 1988 (Yokomizo, 1989).

The 1960s also saw the beginning of the construction of the Cuiabá-Porto Velho highway; later it would bring into the state of Rondônia, in the western Amazon, large numbers of land-hungry settlers -- mostly rural migrants from the center-south.

c. Intensification of the Amazon strategy (1970-75).

In 1970 the military stepped up sharply the policies to promote the occupation of the Amazon. The main instrument was the **National Integration Program (PIN)**, combining large investments in road construction in the Amazon with short-lived attempts at promoting public "model" agricultural settlements for small farmers and peasants; it also broadened significantly the incentives for private investments in the Amazon. Moreover, virtually all public lands then owned by the region's states were transferred to the federal government, which thus acquired substantial control over an enormous stock of land.

The road construction program was extremely ambitious. It aimed at crisscrossing the Amazon with highways. The Transamazônica highway would cross the region from east to west and there would be a road accompanying the perimeter of most of the Brazilian Amazon's international border. Other trunk roads would be built or improved to provide the more developed Center-South access to strategic portions of the region.

However, only part of the projected roads were actually built -- especially a portion of the Transamazon highway, together with the Manaus-Porto Velho and the Cuiabá-Santarém trunk roads (see Figure 2); the Cuiabá-Porto Velho highway was also concluded. Rendering accessible extensive areas of land previously protected by a dense forest from almost all forms of human intervention, these roads were fundamental for the promotion of agricultural colonization in parts of the Amazon.

As for small farmer settlement, reportedly moved by the situation of the overcrowded, poverty-stricken Northeast, the military regime launched, under PIN, a model colonization program along the eastern parts of the Transamazônica road, aimed at alleviating that region's demographic pressure. At the same time, model colonization projects were created in the then federal territory of Rondônia, in the southwest of Brazil's Amazon, with the objective of attracting small farmers with some experience in modern agriculture from the south. In both cases, the objective was to settle the chosen areas in an orderly fashion, in widely publicized "model" colonization projects.

The fiscal incentives program was also stepped up. Between 1966 and 1972 substantial areas of land were incorporated into agricultural projects, some of which were enormous. The high world prices of beef of the early 1970s led to hopes that the Amazon would become a major world exporter of this commodity.

In short, the idea behind PIN was, on the one hand, to have an orderly flow of migrants from the Northeast and from the South settle parts of the Amazon, produce subsistence goods and furnish manpower for other developments; and on the other, to have private initiative, stimulated by the fiscal incentives scheme, originate

a growing flow of agricultural products, both for the domestic market and for exports. With this the region would be settled and incorporated into the national economy, and the danger of foreign intervention would be put off.

d. **Loss of impetus and change in instruments (1975-79).** Events did not materialize as expected, however. The oil crises of the decade reduced the country's growth and made it more difficult to obtain resources for the road construction program. Moreover, the high oil prices highlighted the problems of the remoteness of the settlement areas. Consequently, there was a substantial abatement in road construction in the region.

The period witnessed a considerable change in Amazon occupation tactics. After 1974 a growth-poles conception replaced the shotgun tactic of the past. The idea was to concentrate efforts in areas considered to have higher potential, avoiding dispersal of scarce resources. This came at a time of official disappointment, both with public colonization and with the fiscal incentives projects.

The public colonization projects turned out to be a failure; there were severe administrative problems, agricultural technology applied by the settlers was inappropriate, and they had difficulties in adapting to the region's environment; thus, "model" colonization was phased out. However, a much larger flow of spontaneous immigration began, propelled by small farmers and workers displaced by conservative modernization in the Center-South. This forced the government to continue implementing colonization schemes, though now in a remedial fashion (Mueller, 1980; Martine, 1990). In spite of these efforts, the pressure of spontaneous migration was such that the demand for plots in colonization projects by far exceeded those made available by the government; therefore, there was an increasing invasion of land by migrant families, both in parts of eastern Amazônia and in Rondonia. Large numbers of outsiders settled in public and private land wherever road access was available and repression was unable to stave off invasion. By and large, invasion of public land was condoned and even, eventually, "regularized" by the government; however, that in private or disputed lands frequently resulted in violence (Mueller, 1983, Sawyer, 1990).

The enthusiasm with public colonization was replaced with strong hopes for private, government sponsored, colonization. In the early 1970s the government started providing access to public lands and to subsidized credit, for private ventures and cooperatives willing to undertake colonization projects, destined mainly for settlers with some capital and experience from the south of Brazil. Most of these projects were implemented in the north of the state of Mato Grosso, in areas of transition between rain-forest and savanna.

Private colonization gained impetus particularly in the 1976-81 period. Between 1970 and 1986, 104 private colonization projects were created, with a total area of 2,9 million hectares; however, 66.8% of the projects were established between 1975 and 1981, covering 68.1% of the total area in these projects. The size of farms sold was mainly in the 100 to 500 hectare range. Their settlers' main objective was to cultivate commercial crops; in the 1980s, the private colonization area became an important producer of soybeans (Mueller, 1990).

As for the large-scale fiscal incentive projects, they also fell far short of original expectations, and the number of projects approved was sharply reduced. In the 1973-79 period only 56 projects were approved, or 7.6% of all projects approved between 1966 and 1988. This meant a sharp decline; in the previous 7-year period, 312 projects, or 40.7% of the 1966-88 total, had been approved (Yokomizo, 1989). Moreover, new rules were established, prohibiting projects in the core of the Amazon rain forest, and providing for stricter controls.

However, the hopes placed on large investments in the Amazon were far from over. In the period Daniel Ludwig's huge Jari project, in the eastern Amazon, began to take shape. Over 100,000 hectares of the total 1,5 million owned by the enterprise were cleared and planted with Gmelina and Pinus Caribea, to be used as raw material for a large pulp plant that had been imported from Japan; rice was cultivated on 4,000 hectares of flood plain and minerals were discovered and exploited (Fearnside and Rankin, 1979). All of this was done with Ludwig's own resources but with backing from the government. The high official praise received by this initiative suggested that this was to be a new avenue for the development of Amazonia.

e. Large growth-poles programs and uncontrolled expansion of incentives projects (1980-88). The two main Amazon programs of the period were the POLONOROESTE program in the west and the Grande Carajás complex in eastern Amazon. The latter was a large multisectoral program based on the extraction, transformation and exportation of the mineral wealth of the Carajás region, in a clear export enclave orientation. The agricultural component of the Grande Carajás project was modest, but the migrants attracted to its agricultural area of influence can be expected to have impacts in terms of deforestation. Moreover, the project included controversial components, such as producing iron ore with charcoal, partly extracted from the native forest.

The Integrated Development of the Northwest Frontier program (POLONOROESTE), financed with resources from a World Bank loan, was conceived to impose some order to the chaotic occupation of Rondônia and of parts of Mato Grosso state. It aimed at improving the possibilities of success of the area's migrants, at reducing the environmental degradation which was taking place there, and at

providing protection for its Indian population (World Bank, 1981). Unfortunately, however, most of these goals were not achieved. The main objective of the government with POLONOROESTE seems to have been to obtain resources for paving the highway between Cuiabá and Porto Velho (Martine, 1990).

In this period there was an almost uncontrolled expansion of fiscal incentive projects. Their past failure would suggest that this line of action should be discontinued, but political pressure by interest groups kept the scheme going. The transfer of wealth it promoted was such that these groups fought fiercely against interruption. The transfer took place directly, through the incentives and subsidies schemes, and indirectly, through the rapid increase in the price of land fostered by the process and by the flight into real estate promoted by an accelerating inflation (Binswanger, 1991). In the seven years between 1980 and 1986 the fiscal incentives scheme approved 353 agricultural projects, or 46.1% of the total for the 1966-88 period. The size of the projects tended to be smaller, and most of them were in the periphery of the rain forest; however, control by the federal agency in charge of the fiscal incentives program became lax and the mismanagement of the enterprises and the inappropriate use of incentive monies became acute (Yokomizo, 1989).

The fiscal incentive scheme was reduced in 1987, and temporarily suspended in 1989 by a government decree. Agricultural fiscal incentive projects in the Amazon core can now only be resumed after the conclusion of a detailed zoning study, presently being executed. However, the 1988 Constitution maintained fiscal incentives as an instrument of regional development, and there is the danger of a resumption of agricultural projects in the future. Now they can only be undertaken in the already degraded areas or in the savanna areas of the Legal Amazonia region.

Finally, this period saw the failure of the Jari project. Increasing problems with the enterprise led Ludwig to transfer, in 1982, his control to a Brazilian group with government backing. The difficulties of undertaking large-scale ventures in the Amazon defeated even this American billionaire (Mueller, 1983).

In conclusion, a vast array of policies, evolving since the late 1960s, had a considerable impact over the Brazilian Amazon -- not in terms of agricultural and livestock expansion and of economic development, as intended, but of population movements, social dislocations and the occupation of land, having resulted in senseless deforestation and alterations of the ecosystem of a growing segment of the region, and in the distress of Amazon Indian peoples.

3.2. Colonization in the Other Latin American Countries

The Amazon of most of the other Latin American countries with presence in the region is composed of a rain-forest covered lowland, and of a high montane forest area (with altitudes ranging from 600 to 2000 meters), mostly on the eastern slopes of the Andes. The high forests (selva alta) comprise a smaller portion of the Andean countries' Amazon but it concentrates most of their colonization, and thus, deforestation. In contrast to Brazil the lowland Amazon of these countries remains substantially untouched (Coomes, 1991). This section focuses in broad terms the policies and the experience of colonization in the Amazon areas of Bolivia, Peru, Ecuador, Colômbia and Venezuela.

3.2.1. The Bolivian case.

Bolivia is considered an Andean country, but nearly two-thirds of its territory is Amazonian. Parts of its selva alta (high forest) have been explored since the 16th century, resulting either in the extermination, the expulsion or the absorption by the conquerors of their Indians. This notwithstanding, the area remained essentially unexploited until the early 1950s. In 1952 the Movimiento Nacional Revolucionario (MNR) came into power by a revolution; this political movement became notorious by the agrarian reform, the nationalization of the mines and the abolition of feudal obligations it promoted. However, it also introduced an Amazon colonization policy, the main objectives of which were to promote the expansion of agricultural production, to alleviate demographic pressures in the highlands, and to integrate the Amazon into the country's economy. An important element in this policy was a highway, completed in 1954, linking La Paz with the high forest city of Santa Cruz, through Cochabamba. Moreover, between 1954 and 1956 four colonies were begun there, followed by more modest attempts in other selva alta areas made accessible by road construction. MNR also provided incentives to commercial agriculture in the Santa Cruz area; the strict "agrarian reform legislation (introduced by MNR) was eased in the Oriente by the absence of pressure on land" (Green, 1980, p. 171).

Bolivia became known for its frequent changes in administration and in political regimes but the attempts at promoting the settlement of the highlands excess population in the Amazon by public colonization were seldom interrupted (one exception was in the early 1970s). And the pressure on land in the highlands continued to displace large numbers of peasants, many of whom went to the Oriente in search for land.

In spite of the political changes since the 1950s, the objectives set by the MNR revolution for the Oriente were gradually achieved; over the years, parts of the selva alta (especially the Santa Cruz area) experienced considerable economic change. However,

the role of government colonization schemes in this was minor. Other factors such as the discovery and exploration of oil, the expansion of commercial agriculture on large farms and ranches outside colonization projects, an incipient industrialization and, more recently, the cocaine trade, were dominant. "Nonetheless, for many years the colonization effort was a major fact in the development plan of Bolivia, involving considerable expenditures in monetary and human resources." (Stearman, 1984, p. 233). International financial support was assured and the Amazon highlands received a flow of domestic and foreign settlers.

As for the performance of the colonization programs, only those involving foreign settlers, backed by special schemes, had some success. The public colonization programs had poor performances, and their attrition rates tended to be very high (Stearman, 1984; Rivière d'Arc, 1980). The main problems experienced by the latter were deficiencies in transportation and marketing, unstable and inefficient administration, graft and excessive paternalism. In the 1960s the Instituto Nacional de Colonización (National Colonization Institute) was created to administer the official programs, but this did not markedly improve the situation. The main impact of colonization on the development of Santa Cruz was the manpower it attracted, an important element for the expansion of other activities there.

By the mid 1980s colonization in Bolivia was basically spontaneous or semi-directed, with the National Colonization Institute merely providing secondary or tertiary roads, some technical assistance, water and, in some localities, schools (Stearman, 1984, p. 238).

As for the economic and demographic impacts of Amazon settlement, contrary to the case of the other Andean countries with shares in the region, for Bolivia they were considerable. The Santa Cruz region became an important agricultural area, generating growing surplusses, both for the domestic market and for exports. Moreover, it was estimated that in 1990 the population of Bolivian Amazon reached 3.7 million inhabitants, or 50.7% of the country's total; in 1960 this proportion was only 38.1% (Butts and Bogue, 1989, pp. 51-2). The very difficult conditions in the highlands have transformed the Amazon virtually into Bolivia's only area of economic and demographic expansion.

3.2.2. The Peruvian case.

Similarly to Bolivia, the Spanish conquerors also explored but left unpopulated extensive areas of the Peruvian Amazon, and this situation did not change even when the extraction of forest products acquired importance there. Only in the 1940s waves of migrants began colonizing in increasing numbers parts of the country's high forest. The main factors in this were the increase

in population density of the coastal and highland areas and a sharp expansion in land concentration there, bringing about problems of rural exodus, urban saturation, food deficits and political unrest. Since conservative interests opposed land redistribution, as the Amazon was made accessible by road construction, the region became an outlet for landless peasants from the old areas.

However, a concerted colonization policy was established only in the 1960s. Previously peasants were settled in the Amazon, but not directly by the government. In 1954, for instance, the American millionaire le Torneau obtained 400,000 hectares in the Amazon, from the Peruvian government, to undertake a colonization project which, in spite of large expenditures, failed and was abandoned. Similarly, land was granted to companies in charge of road construction in the high forest, and to their employees, for sale in parcels to colonists from the Andes (Chirif, 1980, p. 187).

An Amazon strategy was introduced only in the 1960s, during the first period of President Belaunde Terry. It was decided that the region should be settled and developed, and that this would be achieved by the construction of access roads and by colonization. There would be an highway, the Carretera Marginal de la Selva, along the eastern flank of the Andes; from it new penetration roads would be built. Actually, Belaunde Terry conceived the Carretera Marginal to facilitate the development and the economic integration of the Andean countries's Amazon. It would link the Venezuelan-Colombian border to southeast Bolivia, through the Ecuadorian and Peruvian high forests. However, the road was constructed only in Peru (Schuurman, 1980).

Official colonization was also part of the strategy. In 1966 a large colonization project began to be implemented in the Huallaga river valey; it was financed through a US\$ 41 million Interamerican Development Bank (IDB) loan. Two other smaller projects were also created (Schuurman, 1980, p. 108). All of these experienced problems and were phased out.

In the 1960s and early 1970s official, and more importantly, spontaneous colonization, settled eleven important river basins on the eastern slopes of the Andes (Aramburú, 1984, p. 175). Spontaneous colonization was undertaken by two different segments from the highlands and coastal areas: landless peasants, and entrepreneurs interested in cattle ranching and commercial agriculture. As they did so, the Indians were pushed off of their land; some moved to the remote lowland areas and others were assimilated into new communities to be exploited as laborers or as producers of staple agricultural products.

The military coup of 1968 changed the Amazon strategy. Colonization was downplayed, an Indian rights policy was established and there was a shortlived attempt at dealing with agrarian problems directly in the coastal and highland areas.

However, this did not last, as changes took place within the military leadership. And Belaunde Terry, elected for a second term in 1980, resuscitated the Amazon development strategy. Assistance programs for the region's settlers were established, and colonization schemes were again implemented or revived, now with American aid. Between 1981 and 1985, USAID funds in the amount of US\$ 167 million were allocated for this purpose, with disappointing results (Aramburú and Garland, 1986, p. 115). There were other actions, and incentives were given for settlers to move north to consolidate the border with Ecuador (Stocks, 1984).

In the 1970s the Peruvian Oriente also experienced an oil boom; exploration companies moved into parts of the region, creating temporary jobs but also generating substantial dislocations; and, with the end of prosperity, unemployment became a serious problem in some areas.

More recently there was a sharp expansion in the illegal cultivation of coca, creating a problem of almost unmanageable proportions. As a matter of fact, the wisdom of pouring abundant foreign aid into areas already settled, but of a low potential has been questioned. Apparently this can be explained by the pressure by the United States for the eradication of coca cultivation in Peru (Aramburú, 1984, p. 156). At any rate the results of these attempts were poor, and both state and foreign aid to colonization were gradually phased out. Some of the affected areas have recently experienced a strong presence of the Sendero Luminoso guerilla group.

The Amazon strategy of the 1980s was also extremely generous with entrepreneurs willing to invest in remote areas of the region. In 1978 a decree-law annulled the law recognizing the rights of Amazonian indigenous communities and established the possibility, under certain conditions, of concessions for the exploitation of national forest reserves -- previously a state monopoly (Chirif, 1980, p. 191). The decree imposed safeguards for this, but a legislative decree by the Belaunde Terry government eliminated most of those, making it much easier for national and foreign companies to gain access to land in the reserves. According to Stocks, (1984, p. 53) "as much as 90 percent of national forests in some areas has been given over through such concessions."

The events examined above -- especially the spontaneous colonization and the entrepreneurial activities -- were responsible for a considerable demographic expansion in the Peruvian Amazon. Although migration into the coastal areas (an particularly into large cities) has been much more active, the population of the Amazon grew, between 1940 and 1981, from little more than 400,000 inhabitants (6.7% of the country's total), to over 1,8 million inhabitants (10.6% of the total). While the high forests environment was responsible for most of this demographic increment, there has also been an inflow of migrants into parts of the Amazon

plain. However, transportation and other difficulties have maintained the rate of growth there considerably smaller than that of the high forest (Aramburú, 1984, p. 156-60).

3.2.3 The case of Ecuador.

Similarly to the other Andean countries, the official concern with the settlement of the Ecuadorian Amazon is recent. It was basically motivated by the 1941 war with Peru over petroleum, in which Ecuador lost part of its Amazon territory. This highlighted the urgency of settling the Amazon and of integrating the region to the national economy, and colonization policy became essentially oriented by geopolitical concerns. Military posts and colonization projects were established in areas of low economic potential, with the main object of establishing some control over the country's borders (Bromley, 1980; Uquillas, 1984).

Spontaneous population movements in Ecuador began accelerating in the late 1940s. They originated from the older, more densely populated areas in the Andean highlands and on the coast, reaching rain forest areas both in the coastal lowlands, and the high forests east of the Andes. Again, the factors of expulsion were demographic saturation and agrarian problems in the highlands and in the coast, coupled with conservative resistance to change. And the factors of attraction were the availability of jobs and of land in parts of the Amazon.

An element in this was the oil boom which took place in parts of the region beginning in the late 1940s. Roads to the oil areas facilitated the migratory process, there were jobs in oil and timber extraction activities, land was available and the population in these areas required agricultural products. Entrepreneurs also saw an opportunity in cattle ranching and in the production of tropical commodities.

The government favored and stimulated spontaneous colonization and created several colonization projects. By 1981 there were seven official colonization projects in the Ecuadorian Amazon, located in the provinces of Napo (the main oil area), Morona-Santiago and Zamora-Chinche (near the Peruvian border). Gradually, "settlements were consolidated throughout the high forest and intermontane valleys of Amazonia, the majority of them dedicated to farming and ranching." (Uquillas, 1984, pp. 266-7). The official colonization schemes were initially conceived to attract people to empty areas; later, however, they became attempts at controlling the hectic occupation of parts of the region.

There were costs associated with the settlement of the Ecuadorian Amazon. They consisted in the usual social dislocations of frontier areas and in the environmental problems caused by inadequate actions and practices; moreover, the settlers pushed

Indian peoples from their land, forcing them to find new territories elsewhere in the Amazon.

In spite of the recent changes, only a relatively small area of the Amazon was affected by colonization. A major condition for this has been deficiencies in the transportation system serving the region; the movement of population to areas not served by roads has been rather small. There have been plans for the construction of highways and railroads into the Amazon, but they have not been implemented. By 1976 there were only four relatively short penetration roads, either associated with oil exploration or constructed for strategic reasons (Bromley, 1980, pp. 180-1), and the area opened for human settlement was limited. The Amazon demographic evolution shows this clearly. The region's population increased from 1.6% of the nation's total in 1960, to 3.0% in 1980 and to an estimated 4.2% in 1990; in this year there were only some 460 thousand inhabitants in the Ecuadorian Amazon with 76.1% living in the high forest provinces of Napo and Morona-Santiago (Butts and Bogue, 1989, pp. 51-2).

3.2.4. The case of Colombia.

Colombia has interesting geographical features; it is an Andean country, but it shares the Caribbean coast and has an extensive Amazon area.

As was the case of the other Amazon countries, the Colombian Amazon was explored for centuries but it began to be more intensively settled only recently. Moreover, in Colombia there also were demographic-agrarian pressures leading to the settlement of its Amazon region. However, two events led the government to intervene decisively in the process. One was geopolitical; during the 1930s and 1940s Colombia and Peru were claiming the same land and tension ran high. This led to the construction of a road into strategic areas near the Colombian-Peruvian border and to the incentive of spontaneous population movements to parts of the provinces of Putumayo and Caquetá (Carrizosa, 1983). The second event was the state of insurrection and conflict which erupted in 1948, known as the Violência. When a truce was reached in 1953 it was decided to accommodate peasants who had lost their land, and other victims of the Violência, in Amazon public lands.

The process was stepped up in the 1960s; after the Organization of American State's 1960 meeting in Punta del Este, foreign aid was sought and an organization -- the Instituto Colombiano de la Reforma Agraria (INCORA) -- was created to manage colonization in the Amazon (Dominguez, 1984). The OAS meeting had recommended a strong commitment to agrarian reform in Latin America but Colombia, together with most other Latin American countries, decided that it was politically easier to settle landless peasants in the "empty" spaces of the Amazon.

Therefore, in the 1950s and the 1960s public and private (but government backed) colonization schemes were established, first in the provinces of Putumayo and Caquetá, and more recently, in the province of Guaviare, all in the high forests of Colombia, not too far from the more densely populated regions of the country, bringing an increasing stream of settlers into these areas.

The results of most of these attempts were poor; there was bad planning and inefficient administration of the colonization projects, and in many, isolation, malaria and the lack of support induced the settlers to either move back to the highlands or to search for less hostile areas in the Amazon (Ortiz, 1984). Caquetá seems to have been an exception; the colonization scheme there "showed such a high rate of growth that it stimulated INCORA to concentrate most of its resources in this region, using it as an example of agrarian reform." (Dominguez, 1984, p. 415).

With the discovery of petroleum in the late 1960s, new waves of settlers went into Putumayo. Oil led to the improvement of the transportation system, and generated jobs and markets for agricultural products, encouraging spontaneous migration. Furthermore, the evolution in Caquetá induced wealthier settlers and farmers to move into the province. They were attracted by the improved general conditions and by cheap land, cleared by previous waves of settlers, bringing land concentration into the high forests (Ortiz, 1984, pp. 212-13). These events transformed the two colonization into heterogeneous zones, with urban centers gaining in significance together with a multifaceted agricultural sector, producing both subsistence and market oriented goods.

As it has been the case in the other countries, the waves of first- and second-generation settlers have claimed the forest and Indian lands. The affected Indians were either displaced to other parts of the Amazon or became acculturated, becoming with the poorest migrants, a source of cheap labor and staple products.

In spite of the changes reviewed above, the overall impact of the Colombian Amazon colonization was fairly small. Difficulties of access and of settling the region's inhospitable environment have contained the process in a fairly reduced geographical area and the contribution in terms of production to the national economy is still meagre. Even the region's demographic expansion has been small; it is estimated that, by 1990, the Colombian Amazon population totaled only 533 thousand inhabitants, or 1.7% of the country's total. Most of this is concentrated in the provinces of Caquetá and Putumayo, with 76.1% of the Amazon total population. Guaviare has around 10% of this total and the three remaining Amazon provinces, with a considerable land area, have very small populations.

3.2.5. The case of Venezuela.

The Orinoco river is an important landmark in Venezuela. It starts in the southeast of the Federal Territory of Amazonas, almost on the border with Brazil, runs to the northwest, turns north, following part of the country's border with Colombia; at the locality of Puerto Páes it turns to the northeast and crosses the whole of Venezuela, flowing into the Atlantic Ocean. Hence the Orinoco divides the country in two distinct geographic areas: the Caribbean region, to the north, a densely populated and more developed area; and to the south a vast, still sparsely populated region. And this is where the country's Amazon is. In fact, the region encompasses a considerable portion of the Territorio Federal do Amazonas, in the southern tip of Venezuela. The other political unit to the south of the Orinoco, the state of Bolivar, includes a relatively small portion of the Amazon; most of it is composed by the Guiana Highlands (Esteves, 1986; Butts and Bogue, 1989). We shall take the Federal Territory of Amazon to represent Venezuela's Amazon claim.

The Territory is a remote, sparsely settled area. With 178 thousand square kilometers -- 20% of Venezuela --, its estimated 1990 population totaled only 83 thousand inhabitants; in 1960 it was just over 11 thousand inhabitants (Butts and Bogue, 1989, p.52). One of the Territory's more striking characteristics is its isolation from the more developed areas of the country. No major roads have been constructed there and its fabulous river network constitutes the main transportation system (Esteves, 1986).

Of Venezuela's 42.7 million hectares originally in tropical forests, the Territorio's share is 31.2%; most of the rest is in the state of Bolivar. However, in the present, only a very small portion of the Territory's rain forest has been cleared, since colonization has been negligible there. As a matter of fact, the 8.6 million hectares of the country's tropical forests removed by 1985 (see Table 1), were predominantly outside the Territorio.

The almost inexistent colonization of the Venezuela's Amazon should not be taken to mean that its rain forest is not under pressure. To some extent, this country is currently at a stage similar to that in which the Andean countries were forty years back. The prosperity afforded by petroleum until the late 1970s restricted economic activities and concentrated the demographic expansion almost exclusively to the north of the 6° latitude, and particularly, of the Orinoco (Benacchio, 1982). With the decline of its petroleum revenue in the 1980s, Venezuela was forced to look for new avenues for its development and soon the regional disparities became a national theme. Moreover, the settlement and development of the Amazon was also advocated as a means of protecting the immense, "empty" areas to the south of the country against the ambition of Venezuela's neighbours. And this strongly affected the region's Indian nations.

The Venezuelan Indians began losing their lands in the early colonial period, but until the late 1950s the process had not reached the Amazon. According to Arvelo-Jiménez (1984 and 1986) the situation has sharply changed since, due mainly to the action of economic groups, leading to a growing expropriation of the land, occupied for generations, by the region's Indian peoples. Initially this occurred at a slow pace but in the late 1960s, real or supposed geopolitical strategies of Venezuela's neighbours aroused nationalistic feelings and made the military restless. This led to the inception of the "Conquista del Sur" (Conquest of the South), a strategy for the development and integration of the Amazon to the country's economy. The "Conquista", which received strong backing from the economic groups, envisioned the settlement and development of the region, together with actions to "civilize" the Indians. It claimed that, in their primitive state, the Indians held no allegiance to Venezuela and were potential pawns of foreign interests; thus, they should be acculturated and incorporated into the national society. Arguments such as those opened the opportunity for land grabbing, not by landless peasants, but by the economic groups.

In the Venezuelan Amazon debate, there are two antagonistic groups: the developers, armed with arguments such as those sketched above; and the Indian rights people, arguing against measures which would destroy the identity and remove the land of Indian peoples. Until the early 1970s the former prevailed. In the rest of the decade the influence of the Indian rights group increased markedly; a legislation favoring the Indians was passed and several national parks were created. However, this evolution was sharply criticized by the developers on the grounds that it was endangering national security.

The crisis of the 1980s brought back the development stance for the Amazon, and the impetus of groups which took advantage of the Amazon geopolitical strategy. These groups backed vocal politicians and segments of the media pointing to the danger to Venezuela of the nomadic behaviour of the Amazon Indians and the state of neglect of the southern international borders. It was claimed that, with more modern agricultural practices the Indians would be able to subsist in much smaller land areas. Moreover, by losing their nomadic habits, definite settlements would be established. And of course, such reorganization would make available extensive areas for development. Economic groups had in mind not only the "freed" land, but also mineral and other resources the region might have (Arvelo-Jiménez, 1986).

Venezuela's Amazon frontier is far from opened and settled; however, there is a growing tendency in this direction. Nationalistic feelings are stronger than ever; the discovery of alluvial gold has recently brought a rush of Brazilian gold-diggers into the Venezuelan Amazon, triggering an international incident. Events such as these fuel the developmentalist stance; if the

pressure continues increasing the danger is that the environmental and Indian protection regulations laboriously introduced over the years will be overrun, roads opened and a rush of settlers induced to take over land in the Amazon, similarly to what has occurred to the other Latin American countries with a share in the region. Apparently, a factor holding this back is the copious river network of the Federal Territory, meaning that road construction there is an arduous and very expensive task (Esteves, 1986).

4. CONCLUDING COMMENTS

We observe several elements in common in the colonization experiences reviewed above. In most countries the land holding class of the old, settled areas, successfully avoided the expropriation of its land by persuading the government to direct the peasants and landless workers to the "empty" Amazon. In most, geopolitical elements had a central role in defining their Amazon strategies. In many, there was the discovery of petroleum in the Amazon, with important effects in terms of improvements of the transportation systems, of job and market creation, and of geopolitically induced colonization. And in all, economic groups had influence over Amazon policies and were important actors in the events which unfolded.

The effects of the Amazon strategies and colonization policies also exhibit common features. Relative to the total Amazon area of each country, the land area affected by the action of settlers and large agricultural ventures is not too large; by making the access and the economic exploitation difficult, the rain forest itself has moderated the impact of human actions over the region. Similarly, with the exception of Bolivia, the demographic impact of recent Amazon colonization has not been impressive; the same can be said about its contribution to the countries' economies. On the other hand, with the exception of Venezuela, considerable amounts of resources have been poured into colonization schemes with usually very poor results, there has been a senseless destruction of tropical forests, and the native populations have suffered violence and expropriation. Both, in Brazil and in the Andean countries, the results of the colonization experience were extremely negative and frustrating.

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